



FINAL DESCRIPTION AND ELEVATION OF BENCH MARKS

State Form 3031 (R3 / 2-06)

Indiana Department of Transportation
Attention: Survey Operations Manager
Crawfordsville District
P.O. Box 667
Crawfordsville, IN 47933
Telephone: (765) 361-5643

- INSTRUCTIONS:
1. Familiarize yourself with the requirements on the back side of this form.
 2. Complete all sections and make sure that all entries are either typed, or written legibly using black ink.
 3. Make a rubbing and or a photograph of the bench mark.
 4. Submit all required materials (i.e. this form, photograph/rubbing and field notes) to the Survey Operations Manager within 30 days of establishing the elevation.

INDIANA DEPARTMENT OF TRANSPORTATION CRAWFORDSVILLE DISTRICT

Bench Mark Name: _____

Elevation In Feet: _____
(International Feet)

Date Elevation Established: _____

Contract Number: _____

Level Datum, Check One:

☐ NGVD 1929 ☐ NAVD 1988 ☐ Other _____

Elevation Established From Which Agency, Bench Mark Tablet Name: _____

☐ NGS ☐ USGS ☐ USC&GS ☐ Other _____

Method Of Establishing Elevation: ☐ GPS ☐ Differential Leveling

Does This Bench Mark Replace A Bench Mark? ☐ Yes ☐ No

If Yes, List The Previous Bench Mark Name: _____

Located In The _____ Quadrant Of Section _____, Township _____, Range _____,
(NW,NE,SW,SE) (1-36) (# N/S) (# E/W)

_____ Principal Meridian, _____, _____
(1st Or 2nd) (Civil Township) (County)

Other Description As Necessary (Military Grants, Donation Lands, Etc.)

_____ Miles _____ Of _____ On _____
(North/South/East/West) (Major Cross Road) (Route)

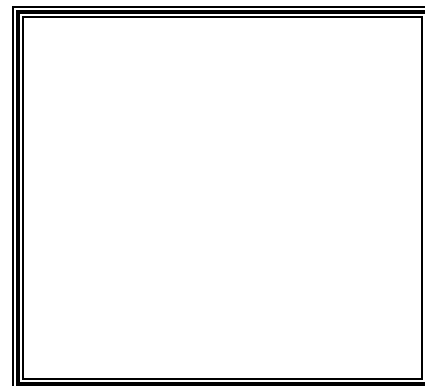
Further Described As Follows:

Final Notes by: _____
(Printed Name)

Checked by: _____
(Printed Name)

Date: _____ Signature: _____
(Professional Signature)

Cc: Manager of Aerial Engineering
Final Construction Record



(Professional Seal; Surveyor/Engineer)

Section 105 Control of Work

105.08 (b) Construction Engineering by the Contractor, (page 96 & 97 of the 1999 Standard Specifications and modified by the Supplemental Specifications pages 102 & 103 dated March 1, 2005)

Bench marks and elevations shall be established on new or rehabilitated bridges. The elevations shall be tied to the United States Geodetic Survey system providing there is an existing monument within a radius of 5 km (3 mi) of the bridge site. If a monument is not within this distance, the elevation of the new bench mark shall be established from the bench marks shown on the plans. Tablets will be furnished by the Department and shall be set in the new concrete at the locations directed. The Contractor shall document the elevation on the proper forms furnished by the Department. The forms shall be signed, sealed, and dated by a land surveyor or engineer who is registered in the State. The work shall be performed in accordance with Part 3 of the Department's Design Manual. Copies of the forms shall be provided to the Engineer for distribution.

All stakes, templates, straight-edges, and other devices necessary for checking, marking, and maintaining points, lines, and grades shall be furnished.

On a road contract, the level circuit to check the plan bench marks shall be run for the full length of the project. Intermediate bench marks shall be established approximately every 150 m (500 ft) through the project. On a bridge contract, the circuit shall include four plan bench marks, if available, two on each side of the structure.

Field notes shall be kept in hard covered bound field note books in a clear, orderly, and neat manner consistent with standard engineering practices and in accordance with the Department's prescribed note book procedure, including titles, number, and indexes. Such note books shall be furnished by the Contractor and shall adequately document all survey information. Copies of field notes shall be furnished to the Engineer upon request during the contract time. The original field notes shall become the property of the Department upon completion of the work. Such field notes shall be bound. All pages shall be numbered before submission to the Department.

GPS-Derived Orthometric Heights:

If GPS is used to establish bench marks on the project site then the NGS Technical Memorandum "Guidelines for Establishing GPS-derived Orthometric Heights" shall be used as the guidelines for the survey procedures which can be found at http://www.ngs.noaa.gov/PUBS_LIB/pub_index.html.

Bench Mark Rubbings:

A rubbing of the occupied bench mark shall be made on a separate attached sheet. When not feasible to make the required rubbing, a digital photograph (.jpg format) of the bench mark must be substituted. Accurately and legibly record all markings. The stamping must be legible, whether submitting a rubbing or digital photograph.

Sample Bench Mark Descriptions (Further Described As Follows):

For A Structure:

A standard INDOT bronze tablet set in concrete at the north west corner of bridge over White Water River

Or

For A Bench Mark Post:

A standard INDOT bronze tablet set in concrete bench mark post 298 feet north of Washington Street and 24.4 feet left of the centerline of roadway.

(North, South, East, West) (Major Intersection)

Old Bench Mark Tablets:

Old bench mark tablets shall be returned to the District Office which issued the new bench mark tablet.